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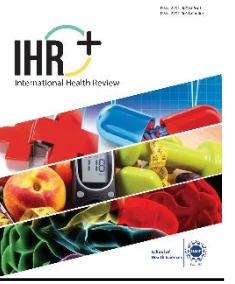

Title:	**Association of balance self-efficacy with activity and participation in chronic stroke patients of Lahore**
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Association of Balance Self-efficacy with Activity and Participation in Chronic Stroke Patients of Lahore, Pakistan

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Abstract

Stroke is a major cause of disability and causes a number of impairments including balance issues, gait impairments, and loss of daily life activities. The incidence of stroke is increasing in developing countries like Pakistan because of the increasing life stresses. The purpose of this research is to analyze the association of balance self-efficacy with activity and participation in chronic stroke patients. This was a cross-sectional study conducted in Lahore; Pakistan in 2017. The population of the current study was chronic stroke patients. The study was completed within 3 months after the approval of the synopsis. Non-probability convenient sampling technique was employed to conduct this study. A Sample of 135 stroke patients was taken from a population of 3500 from the stroke care unit of above-mentioned hospital. Ischemic stroke patients and patients with 6 months of stroke were included in this study. Unstable patients with other systemic diseases and with psychological issues were excluded from this study. ABC scale was used for the evaluation of balance self-efficacy and the Modified Barthel index was used for assessment activity and participation in stroke patients. The data was analyzed using SPSS v20. The result showed that the P value of balance self-efficacy is 0.000. As the P value is less than 0.05 so the association is significant. P value ≤ .05 was considered statistically significant. There is a significant association of balance self-efficacy with activity and participation in chronic stroke patients.

Keywords: ABC scale, ischemic stroke, modified barthel index

Introduction

Stroke is one main cause of disability in the elderly and a major cause of disease burden globally, which leads to many physical impairments and

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balance issues [1-3]. Physical activities are defined as body movements with the use of muscles and the skeletal system, a lack of physical activity is the main risk factor for stroke, especially in elderly people and common in people who are already suffering from stroke attacks. Once a patient has experienced a stroke attack then there is a further decline in physical activities [4-6]. Patients that experienced stroke suffer from sensory, motor, visual, and cognitive impairments, which have a huge impact on their daily life activities, and a decrease muscle strength and coordination. All of these results in balance issues and reduced walking ability, respectively [7-9]. Stroke is the 2nd major reason for death in individuals all over the world. The total no of stroke patients reported in 2010 with the initial attack is 16.9 million.5-9 million people died due to stroke respectively. Stroke is ranked at no 3 for causing disability and death in old people in the USA. Although the decreasing incidence of stroke in developed countries, its prevalence is increasing due to greater survival rates.

Physical therapists should also study more about different variables related to strokes like impairments, disability, balance efficacy, fall efficacy, and quality of life so that the patients are benefited [10-12]. The incidence of stroke is decreasing in western countries especially developed countries but increasing in Asia and countries like Pakistan because of the increased risk factor. Every third person with an age more than 35 is suffering from hypertension and diabetes mellitus. So the overall scenario of stroke is very dreadful in Pakistan [13, 14]. In stroke survivors, sensory-motor impairments like spasticity, balance and gait speed are associated with activity similarly non sensory-motor impairments like cognition, mood, and language are also associated with activity and practice-in free ambulatory chronic stroke survivors [15, 16]. There is a reduced walking activity in stroke patients, this may be due to overall issues in gait or impairment in specific areas so these should be considered and understood well to devise treatment plans for betterment in activity in patients [17, 18].

Self-efficacy and participations are important after stroke low self-efficacy in patients shows less improvement in balance while high self-efficacy results in significant improvement related to fall prevention [18, 19]. Many studies conducted on variables related to stroke in Pakistan, especially on balance self-efficacy and post-stroke participation, there is a lack of research in this regard. However, as it is an interesting topic to physical

therapists, more and more work is required to be conducted on this specific issue for the betterment of stroke patient in our country.

Pang et al. [20] collected and studied secondary analysis from clinical trials related to the activity of patients. Activities related to balance were checked by Balance Confidence Scale to measure the satisfaction with community integration. In older adults with chronic stroke balance self-efficacy was found as the only independent variable to influence satisfaction. Community reintegration can be enhanced by improving balance self-efficacy [21]. Said et al. [22] conducted an observational, prospective study and found a greater incidence of falling, which is related to the failure to cross an obstacle by stroke survivors. A total number of 32 patients having recent stroke attacks were included to conduct the analysis. Patients walked at a selected velocity and stepped over a 4cm high hindrance. Those who crossed were rated as pass and those who were unable to cross were rated as fail. Falls are found to be linked with failure to cross obstacles and obstacle crossing is much more important to find the falls risk. To avoid falls a response of compensatory stepping is very important [23].

Salot et al. [24] conducted a cross-sectional study of the procedure of fall risk in survivors of stroke when encountering sudden forward slip alarms instance. 14 patients with stroke, matched aged AC control group with the age of fourteen, and young control YC group with the age of fourteen were exposed to great-size alarms in a forward stance. Loss of balance toward backward is common among all fall rate. This falling rate was seventy-one%, while the control group, which had no falls, the stroke group took a shorter step length, and more steps with delayed initiation of steps in comparison with the control groups there was a late step beginning, shorter step length and more steps taken by patients with stroke. There is a lack of postural stability with one or more compensatory steps in stroke survivors as compared to other groups because there is a lack of compensatory stepping response and vertical leg support and more risk for falls.

Methodology

The current study employed a cross-sectional study design. Data was collected from Lahore general hospital, Shalimar hospital, General hospital, and Social security hospital. Furthermore, ethical approval was taken from the hospitals to gather the sample. The population of study was chronic stroke patients. The study was completed within 3 months after the approval

of synopsis. For this purpose, convenient sampling technique was employed. A Sample of 135 stroke patients was taken from a population of 3500 from the stroke care units of above-mentioned hospitals. Ischemic stroke patients from the OPDs of above-mentioned hospitals with a minimum of six months after stroke were included in this study. Medically unstable patients with other systemic diseases and with psychological problems were excluded from this study. Non-probability Convenient sampling was used. The data from patients were collected with the help of 2 questionnaires "The ABC scale and the Modified Barthel index Scale". Data was analyzed using SPSS V20.

Results

Table 1. Descriptive Statistics of the Frequency of Gender

Gender	Frequency	Percent
Female	41	30.4
Male	94	69.6
Total	135	100

Out of the sample 135, 94 were males, which constitute 69.6 while 41 were women, which constitute 30.4%.

Table 2. Descriptive Statistics of Mean of Age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	135	39	85	60.99	11.370

Out of sample 135, minimum age is 39 and maximum age is 85 with Mean± SD (60.99±11.37)

Table 3. Descriptive Statistics of Frequency of Categories of ABC Scale

ABC scale	Frequency N=135	Percent
0-20	43	31.9
21-59	50	37.0
60-100	42	31.1
TOTAL	135	100

Out of 135, 43 frequencies come in category 0-20 with 31.9 percent, 50 frequencies come in 21-59 category with 37.0 percent, and 42 frequency comes in 60-100 with 31.1 percent.

Discussion

The study showed association between balance self-efficacy with activity and participation in chronic stroke patients. Previously, studies showed that balance self-efficacy was the only independent variable in influencing satisfaction with community integration. Community reintegration can be enhanced by improving balance self-efficacy by Pang et al. [20]. It was observed that stroke patients showed less activity and participation in the daily activities if their self-efficacy of balance is low. Similarly, stroke patients participate more in daily activities when their balance self-efficacy is high. According to another study, self-efficacy and participation are important after a stroke. Low self-efficacy in patients results in less improvement in maintaining balance, while high self-efficacy results in significant improvement in balance and fall prevention.

According to another study, moderate to severe gait impairments were studied in four hundred and eight patients having a stroke 2 months before, assessment of steps taken for 2 days was done with help of SAM, and strategies other than assessment of steps taken were needed to improve the walking capacity and efficacy of balance by Barak at al. [25].

There were several limitations in the recent study like lack of enough time, language barriers, and non-cooperative behaviour of hospital staff and administration.

Conclusion

There is significant association between balance self-efficacy with activity and participation in chronic stroke. Thus, the alternate hypothesis is accepted. The results showed a significant association between balance self-efficacy with activity and participation because the P value (0.000) was smaller than an alpha value (0.05).

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